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B.C. goshawk advocate acquired valuable tools in the Yukon

by Erling Friis-Baastad

You would think that counting goshawks wouldn't be all that difficult. A striking raptor about the size of a raven, the northern goshawk, *Accipiter gentilis*, is distributed throughout old-growth boreal forest and down into temperate forests.

But according to British Columbia raptor ecologist Frank Doyle, goshawks can be downright elusive, even in landscapes where they are known to thrive.

This young northern goshawk could soon be feeding on snowshoe hares.

(photo: Frank Doyle)

As far as determining how well they're reproducing, well, "it's a lot of work to find a goshawk nesting area," says Doyle.

The biologist works out of Telkwa, in north-central B.C., not far from Smithers. He monitors a large region extending from the north on the Stewart-Cassiar Highway, south and east to Burns Lake and the Interior near Prince George, and west to Haida Gwaii.

Doyle attempts to determine the density of goshawk populations with a view toward helping to manage the species and, by extension, to manage the other species on which they feed.

He credits his eight years of research in the Yukon's Kluane area with providing essential tools for his B.C. goshawk work.

"The birds respond to the playback of a tape of their call when you are within around 200 metres of their nest site," he says.

"You basically have to walk past that site and play the call before you can find the

2008-02838/

nest. It's a lot of work, a lot of manpower, and in most landscapes that's not going to happen because of the expense involved."

But an army of bird counters is not needed now in north-central B.C. because Doyle and his colleagues spent years studying goshawks in a very natural environment in southwestern Yukon.

Doyle took part in the major Kluane Boreal Forest Ecosystem project from 1988 to 1996. Here scientists and students not only surveyed for goshawks, but other birds and mammals as well.

Of focal interest to this project was the snowshoe hare cycle. Hares are a major source of nourishment for goshawks and as the Kluane hares go, so go the goshawks.

"In this natural landscape during the low in hare numbers, there were no goshawks breeding," Doyle says. "Then, as the numbers of hares started to increase, there was one pair (of goshawks) every 12 kilometres. And at the peak in hare numbers there was one pair every three kilometres.

"Throughout this time, there was regular spacing of nesting birds taking place, and that spacing was driven by the amount of food in the landscape."

He admits that appears to be "a very straight-forward thought." But the fact is "it hadn't been applied to trying to understand and manage the species before."

In a developed area, one scored by logging roads and dotted with clear-cuts, scientists wouldn't have been able to get a sense of just how much space goshawks require to hunt and reproduce.

"There are no areas without commercial harvesting and road development" in north-central B.C., says Doyle.

Wild Kluane provided a pristine environment.

With this knowledge on the ratio of food availability to goshawk density, forest industries can "leave nesting habitat at a spacing that's appropriate for the landscape based on what you know to be available as prey in that landscape," he says.

"If you think there is a high density of prey in the landscape for goshawks, you should retain suitable nesting habitat, perhaps at every three or four kilometres.

"And if it's poorer foraging habitat (as on Haida Gwaii) maybe you should be looking to retain suitable nesting habitat every 11 kilometres."

It works the other way around too. If a scientist wants to locate goshawk nests and has an idea of the prey density, it's possible to search at appropriate intervals, and not waste time looking for a nest every three kilometres when seven or 11 kilometres would be more appropriate.

Like all other forest creatures, goshawks have developed specialties.

"Goshawks hunt from perches underneath the canopy; they go from tree to tree and just sit and wait for available prey," says Doyle.

"If the prey is about 30 metres or closer to the tree, they have a high success rate in swooping down and killing that prey, but if you have prey out in the open then we find that the hunting success goes down quite dramatically.

"So if you have large clear-cuts, maybe they can kill prey at the edge of the clearing, but they can't kill prey in the middle of the clear-cut. The prey can see the goshawk coming."

A red-tailed hawk, with which goshawks are sometimes confused, approaches its dinner differently. This bird often soars on high, spots game and then plunges straight down.

Goshawks require perches to hunt from. Red-tails prefer open spaces. The hunting areas of the two species tend to overlap only at the edges of clear-cuts. Too few clear spaces, no red-tails. Too much harvesting with too few trees, no goshawks.

Why should we be so interested in goshawk population densities?

"The main thing is, it is a generalist predator," says Doyle. "It eats a range of forest birds and mammals, so the presence of breeding goshawks gives us an indication of how well we are managing for these other species.

"Without being able to monitor all these other species, if we can get it right for goshawks, then we know we can get it right for most of the mid-sized forest vertebrates on which they depend."

The logging industry has a vested interest in goshawks, he says. For one thing, if goshawks vanish from a landscape because there are too few perches for hunting, for instance, or if there are no suitable older trees for nesting, then hare populations may soar in the absence of this predator.

Hares eat young trees, and high densities may frustrate efforts to replant forests.

While distressed by the fallout of global warming on our efforts to manage these species, as the current plagues of beetles and fungus kill our trees, Doyle is encouraged by the attitudes of those who work in the forest today.

"I've seen dramatic change in the years I've been doing this work. People are talking about the impacts they can have through more selective harvesting techniques that maintain critical wildlife habitat," he says.

Loggers encourage rather than discourage his attempts to help ensure that goshawks have access to the sort of forest they need to survive.

Meanwhile, though he has worked for the B.C. government, First Nations, various industrial licensees, wildlife groups and even a Swedish hunting association, Doyle declares, "I work for the goshawks."